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AUTHOR Greenup, Shirley
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ABSTRACT

Based on a minicourse taught by the author for students in grades 7 through 10 at the Mountain School (Lookout Mountain, Georgia), this curriculum guide provides for the integration of several curriculum areas into the teaching of leathercraft. Contents include (1) concepts and objectives for the course listed under the headings of language arts, mathematics, science, social studies, related arts, and vocational studies, (2) background information on leatherwork, (3) instructions for student activities (types of leather, wristbands, threading and lacing, coin purse, dyeing leather, leather tooling, wristbands, medallions, and hanging candle holder), (4) leather vocabulary glossary, and (5) an 8-item bibliography. (HD)

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# Leather Work

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by Shirley Greenup



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## INTRODUCTION

Since recent years have brought back a revival of the crafts, the interest in and appreciation of handcrafted items has reached the young people of our society. It was, therefore, the author's plan to design a mini-course in leatherwork that would integrate several curriculum areas into the teaching of leathercraft.

This mini-course was planned for a four and one-half day period of time and enrolled students from grades seven through ten at the Mountain School.

The activities planned for the unit give the students an introduction to leather and allow them to become familiar with some of the techniques used in leatherwork

It is the author's feeling that this type course has served to interest and motivate several students who have previously had little interest in school. They have become extremely aware of both the vocational and leisure-time possibilities that this craft has offered to them.

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## CONCEPTS

**Language Arts**
The use of certain vocabulary terms pertaining to leatherwork allows the student to better understand his work.

The ability to read and follow written instructions on leatherwork activities is essential for individualized work.

Assignments related to language arts allow students to express their views concerning field trips, to show their ability to use reference materials and to express their thanks to persons responsible for field trips.

**Mathematics**
Knowledge of methods used in estimating amounts of leather to purchase for a particular project is helpful.

Accuracy in measuring and truing edges is essential for a satisfactory leather project.

Keeping accurate records of all costs, orders and leather sales is essential for business management.

**Science**
In the processing of leather, two methods of tanning are employed to create leather suitable for different uses.

**Social Studies**
Leather represents one of the oldest materials man has used for his basic, as well as his aesthetic, needs.

The various animals used for leather are found throughout the world.

**Related Arts**
Using leather as a medium to create useful and decorative craft objects involves a knowledge of design, skill in using leather tools and accuracy in painting and dying leather.

**Vocational Studies**
The leather industry requires a variety of skills and provides jobs for many people in our community.

## OBJECTIVES

**Language Arts**
The learner will be able to

- Write and spell leather vocabulary words.
- Write definitions for use of leather tools.
- Demonstrate writing skills by composing a theme about a field trip and by writing thank you notes to resource people.
- Read and follow basic instructions for activities in the mini-course.
- Demonstrate the ability to use encyclopedias and other reference materials.

**Mathematics**
The learner will be able to

- Use a ruler to measure one-quarter inch intervals to make a pattern for an expanding wristband.
- Use a compass and a protractor to make a pattern for a hanging candle holder.
- Record all business transactions for leather sales.

**Science**
The learner will be able to

- Explain two methods of tanning leather.
- Identify the raw material used in tanning leather.
- Demonstrate one method of tanning leather.
- Identify one way in which bark used in the tanning process can be recycled.

**Social Studies**
The student will be able to

- List three groups of people who used leather in ancient times.
- List four reasons for the caveman's use of leather.
- List six general uses for leather today.
- Name five animal sources of leather.
- Locate the geographic source of hides on a map of the world.
- Name industries in our community which manufacture and/or work with leather goods.

**Related Arts**
The learner will be able to

- Demonstrate the proper way to prepare leather for tooling, stamping or carving.
- Demonstrate one method of lacing.
- Demonstrate one method of dying and finishing leather.
- Complete one final project in leatherwork.

## ACTIVITIES

**Language Arts**
- Have students study leather vocabulary terms and tools.
- Write a theme on a field trip to saddlery.
- Write thank you notes to the saddlery.

**Mathematics**
- Have each student read the information sheet on wristbands and follow instructions for wristband pattern project.
- Have each student use a compass and protractor to make a pattern for the hanging candle holder. (See student activities)
- Devise a simple method for students to record business transactions in conjunction with leather sales.

**Science**

- View film loop from the Tandy Leather Company on "Introduction to Leather." (Local store address: 5507½ Brainerd Road, Chattanooga, TN 37411.)
- Visit a tannery in your community. (Scholze Tannery in Chattanooga does not allow field trips; however, channel 45, an educational television station in Chattanooga, has produced an informative film of the tannery, which might be used in lieu of a field trip.)
- Read and write a report on the methods of tanning.
- Do worksheet on tanning leather.
- Collect bark from an oak tree to use in preparation of tanning leather. Boil bark in water and let stand. This, along with some preservatives, is similar to the tanning solution used by tanners.
- Purchase a tanning kit from a leather retail store and allow students to experiment in the actual tanning process.
- Visit a nearby garden to see how tanning bark is used as a mulch.
- Read and/or tape article from Robert F.G. Spier's book, *From the Hand of Man: Primitive and Preindustrial Technologies.* Students can listen to tape with earphones while following along with the reading.

**Social and Vocational**

- Read about leather history.
  Suggested resources
  Leather history handout
  *Leather in our Lives* booklet from Leather Industries of America, 411 Fifth Avenue, New York 16, New York.
  *Leatherwork Manual* by Al Stohlman, A. D. Pattern and J. A. Wilson.
  Encyclopedias
- Complete work sheet on leather from readings.
- Plan a field trip to a saddlery, a leather retail store and a leather craftsman shop.
- Do the field trip evaluation form.
- Read about the animal hides used for leather throughout the world in *Leather in our Lives.* Using a world map, draw in the animals whose hides are tanned to make leather and their respective country of origin.
- Complete worksheet on the things made from leather.
- Using the yellow pages of the telephone directory, find the names of businesses which work with leather in some way.
- Using the *Dictionary of Occupational Titles,* select one leather occupation and write a job description for that title.

**Related Arts**

- Read pages 17-20 in *Leather Manual* on "Preparing the Leather for Carving." Answer questions on page 21.
- Make a leather wristband using the stamping tools.
- Make an expanded leather wristband.
- Make a leather key fob, bag tag or medallion.
- Practice three methods of leather tooling.
- Practice lacing stitches.
- Make a leather candle holder.

## BACKGROUND INFORMATION ON LEATHERWORK

Man's life is blessed with many natural resources, many of which have been used in various ways from the very beginning of man on this earth. One of these resources is leather, and it was used by the ancient caveman for clothing, shelter, tools and armament. Cavemen found that leather could be improved by curing the hides, which consisted of rubbing them with fat and smoking them over a wood fire. At times the skins were soaked in pits of decaying leaves and bark.

The primitive societies of Eskimos, American Indians and Africans found that skins were needed for books, robes, moccasins, tepees, canoes and shields. The skillful Orientals used leather for creative art – making boxes, screens and other items decorated with elaborate patterns.

Decorative leather artifacts have been found in Egyptian tombs dating from 1300 B.C. The Roman Centurions used decorated leather shields. The Romans, along with the ancient Greek and Hebrew civilizations, made use of leather parchments for bookmaking.

The Moroccans were the first to attain the skills needed to transform leatherwork into an art. Their work was characterized by original designs embossed, carved and painted on all kinds of leather goods. The Spaniards were influenced by the Moroccans and worked with objects that were appliquéd, carved, inlaid and stamped in both gold and silver. Cordovan leather, made from horsehide, was developed in Cordova, Spain. Designed and colored hides were used as wall hangings, while chests, chairs, bottle covers, book covers and various other objects were decorated with elaborate leatherware.

The Fraternity of Leatherworkers was organized in 1397 and assured high quality workmanship by its members. This craft guild could issue licenses permitting people to practice leather tanning.

The American colonists used leather in making hinges, clothing, buckets, tableware and coach springs. As the West was won, the cowboy used leather for saddles and clothing.

The history of leather tanning began with the early caveman using decaying leaves and bark. The oak bark tanning method was begun by the Hebrews, who soaked the hides in fermented oak and chestnut bark containing tannic acid. This prevented decomposition of the leather and also made it stronger and more pliable. The American Indians developed a process for making buckskin. This consisted of soaking the hides in a lye solution made from wood ashes, scraping the skins and drying them over fire for several days. This made the buckskin soft, flexible and water-resistant.

Tanning is a term for the preservation of hides and their conversion to leather. The hides must undergo three stages of processing, including pretanning, tanning and finishing. Pretanning begins with removing the skin from the animal. A knife is used for this step with small animals, while the skin of large animals is loosened by pounding with a hammer or flail. The skin can then be pulled off with a little cutting. The skin must then be washed and pounded to clean away dirt, blood and some excess flesh. The pounding process loosens the fibers and makes the skin more receptive to the chemicals which follow.

Next, the skin is dehaired. Some of the dehairing processes are as follows.

Sweating – This is controlled rotting of the skin by warmth and high humidity. Urine is used to soak and swell the skins during this stage.

Liming – This involves using lime solutions of progressively greater strength.

Scraping removes the hair loosened by sweating and liming. The hide is then stretched on a frame. The epidermal and subcutaneous layers of the skin are removed during this process. The scraping is followed by washing to remove the traces of dehairing chemicals. The lime is neutralized by adding acids.

At present, there are three main ways of tanning the hide, and each involves a different group of agents – oil tannage, mineral tannage and vegetable tanning.

Oil tannage begins with saturating the clean hide with oil, working it with wooden spades, kneading it and spreading it in the sun. This procedure is repeated several times until the skin will absorb no more oil. The hide is then worked back and forth over a blunt stake until it is soft and flexible.

The mineral tanning process can involve the use of chromium salts, which produces a leather different from that produced by bark tanning. This method was developed by Augustus Schultz, an American chemist, in the nineteenth century. Although the resulting leather was stiff and hard and had to be treated with soaps and oils, it became the most popular method of tanning. It was faster and less expensive than vegetable tanning. The alum process treated both sides of the skin with alum and salt by stacking flesh to flesh in a cool place for several days. One problem with this process is that it is not quite complete and can be reversible in the presence of moisture. The stiffness of an alum tan is slightly alleviated by the addition of salt and some oil is used to finish the leather. Smoke tanning is frequently combined with oil or vegetable tans. There is another mineral tan which combines two mineral tans with oil. The hide is treated with alum and then stuffed with hot beef tallow and finally stretched over a coal fire to burn in the fat. The coal fire emits tars which have additional tanning power.

Vegetable tanning is the only true tan because it involves the use of tanning – oak bark, oak galls, summac, catechol, acacia pods, pomegranate rinds, chestnut wood, pine bark and grape juice. Solutions of these tanning agents are used in successively stronger concentrations, with hides soaked for weeks or months in each. The skin is sewn into a bag which is filled with the tanning agents and hung in a water or liquid filled pit or in the air for months. The vegetable tans may be combined with other tans such as the alum tan. The hide is stored for a while between the two processes. The final step of this tanning produces a tougher leather. The vegetable tanned hide requires oiling to make it useable. It is kneaded and worked in this last step.

Finishing leather could involve the splitting of the hide into different pieces. The split hide produces pieces of differing qualities. The outside portion is preferred, however. A hard polish is rubbed over the other split surface of the leather to produce a finish somewhat comparable to the outer surface of the skin. The leathers may be stained or painted before or after their manufacture into finished products. To obtain a glazed finish, glass rollers under heavy pressure are used to rub the leather. Less glaze can be obtained by using brushes instead of rollers, while a suede finish is given by buffing the flesh side of the skin to raise the nap.

After the finishing process, the hides are sorted according to size and thickness and then marked, rolled into bundles and sent to factories or shops.

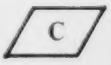
## STUDENT ACTIVITIES

**Types of Leather**

Locate on the following world map where different types of leather have their major source. Use the symbols given beside each type of leather.

**Cowhide**


The major sources of cowhide are the United States, Canada and South America, since cattle are raised chiefly in these countries for beef. Cowhide is strong, durable, flexible and ideal for tooling and stamping. It can be used for all types of projects. Hides vary in weight from 2½ to 10 ounces and are usually purchased in sides that run up to 23 square feet. Hides are used in the manufacture of shoes, luggage, bags, belts, wallets and other leather goods.

**Calfskin** 

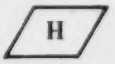

Calfskin originated in the northwestern United States and in Europe. It is a long-wearing, fine-grain and firm-textured leather. It is available in weights from 1½ to 3½ ounces and in sizes from 9 to 16 square feet. It is excellent for tooling and carving leather for billfolds, handbags and other small projects.

**Goatskin and Kidskin**


These skins are for the most part imported from South America, India and North Africa. The goatskin is used for linings, bookbindings, billfolds and tooling leather. The kidskin is used for most suedes because it is sturdy, soft and pliable. These skins come in a variety of colors, weigh about 2½ ounces and vary in sizes, going up to 10 square feet.

**Sheepskin**


Sheepskin is not as strong nor as durable as calfskin. It is suitable for lining materials, making shoes, clothing and handbags. These skins come mainly from New Zealand and South America.

**Horsehide** 


These skins come from Argentina, France and Belgium and are used in the making of gloves.

**Pigskin**


The main source of pigskin is wild hogs in South America. The skin is very durable with a distinctive surface grain that is suitable for tooling. It is used in the manufacture of shoes, gloves, wallets, handbags and luggage. It varies in weight and ranges in size from 9 to 16 square feet.

**Kangaroo hide**


One of the strongest of all leathers is the kangaroo hide. It is found in Australia and is used for making track and baseball shoes.

**Alligator skin**

The alligator is native to Louisiana and Florida in the United States and is one of the most beautiful and toughest of leathers. Latin America is also a source for alligator skins. There is now a ban on using these skins, as alligators are classed as an endangered species. Skins come in various shades of brown and mahogany and vary in size from 6 to 14 inches. They were formerly sold by the number of inches and were used in making billfolds, expensive shoes, handbags and luggage.




**Reptile skin**

Both snake and lizard skins are available from India and South America. They are sold by the inch as measured at the widest point across the belly. Lizard skins average 8 to 11 inches in width and are used for shoes, bags and luggage.

**Buckskin**

Deer from Canada and Latin America provide buckskin. It is used for bags, shoes and luggage.

**Sealskin**

The Arctic Ocean furnishes the seals for sealskin used in making billfolds and luggage.

**Sharkskin**

Sharks are obtained from several ocean areas and are used in making small leather goods and parts of shoes.

= WORLD MAP

## Wristbands

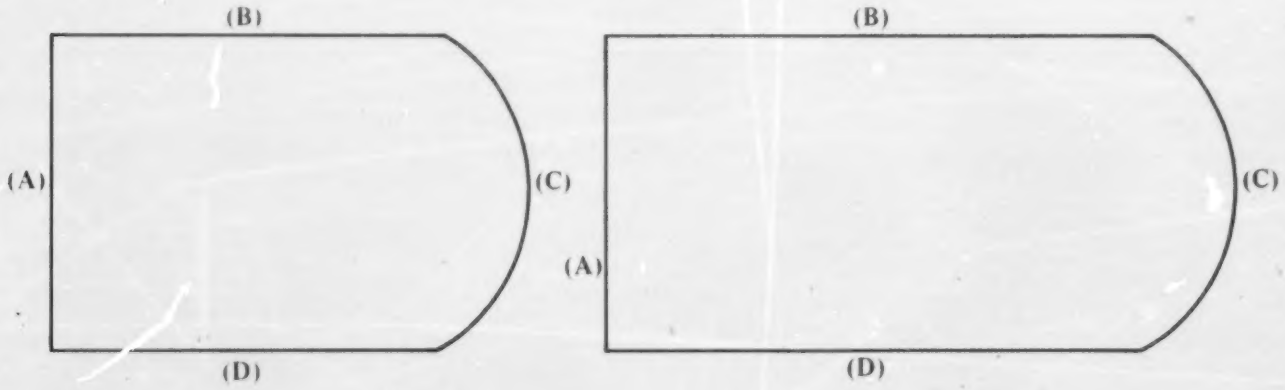
**Objective**
To demonstrate measuring skills, neatness and the ability to follow directions.

This wristband uses the expanded leather technique, which means the leather is cut at intervals and stretched to fit the wrist. A three-inch pattern will expand to approximately two times the length of the leather before it is incised. A four-inch piece of leather (two inches wide) will extend to eight inches.

**Materials**
- Heavy leather – vegetable tanned
- Sharp knife for cutting leather
- Awl or similar pointed object
- Pencil, sharpened
- Ruler
- Paper, plain white, unruled
- Round drive punch
- Leather dyes
- Board for protecting table surface while punching and cutting
- Wet sponge

**Procedure**
- Using a tape measure, measure the circumference of your wrist. _____inches.
- At the bottom of the page (left) is a pattern shell for a six-inch wrist measurement; below (right) is a pattern shell for an eight-inch measurement. Use the pattern closest to your wrist measurement.
- Using a ruler and pencil, draw the following *vertical* lines on your pattern. All vertical lines are to be spaced on eighth of an inch apart.
- Line #1: Draw a vertical line measuring one and five-eights inch. Begin your line three sixteenth of an inch from the top side (B) and one eighth of an inch from the left end (A). There will be three sixteenths of an inch of space between the end of your first vertical line and the bottom of your pattern (D).
- Line #2: Draw two vertical lines measuring seven eighths of an inch each. Begin at the top of side (B). Leave a one-quarter inch space. Draw another vertical line seven eighths of an inch, extending to the bottom (D).
- Line #3: Continue as for line #1.
- Line #4: Continue as for line #2. Repeat until you are seven-sixteenths inch from the edge.
- When all vertical lines have been drawn, have teacher check.
- Cut paper pattern out carefully.
- Using masking tape or paper clips, secure pattern to dampened leather. (Wet with a sponge.)
- Using a *ball point pen*, ball point stylus or any dull pointed instrument, retrace all of the lines onto the leather. Press firmly, but not too hard.

- Before removing pattern, lift one edge to be certain that the pattern has been transfered to the leather.
- Place a heavy board on table; carefully cut lines on leather.
- This pattern has a "lock-tab" type closure; however, you may wish to substitute a thong-tie closure.



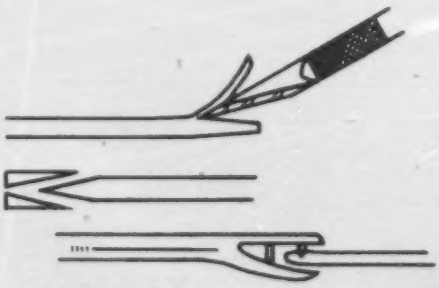

**Threading and Lacing**

**Objective**
To practice threading the needle and to learn the techniques of lacing.

**Materials**
- 2 prong needle
- 1 yard lace
- Leather
- Knife
- Mallet or pliers
- #1 drive punch

**Procedure**

*Threading the Needle*
- Using a sharp knife, shave down one end of the lace.
- Cut to make a point where lacing has been shaved.
- Spring needle open.
- With the smooth side of the lace face up, place the pointed end of the lace in the needle.



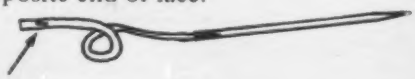
- Snap needle shut over the lace with prongs of needle securing the lace in place.

- A mallet or pliers may be used to close the teeth of the needle.

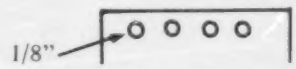
**NOTE**: *Never use more than two yards of lacing at any one time. This is to prevent wear and tear on the lace.*

*Whip Stitch (lace so you are facing the front of the project)*

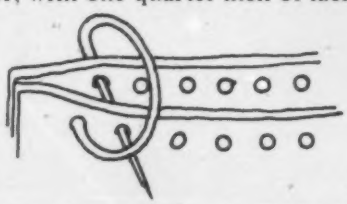
- After the needle is threaded, make a one-eighth inch slit in opposite end of lace.



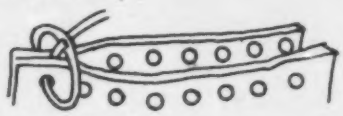
- Using a #1 drive punch, space holes evenly – one-eighth inch from edges and three-sixteenths inch apart. Line up holes of leather pieces.




- Secure lace in between the leather, with one-quarter inch of lacing between the two leather pieces.

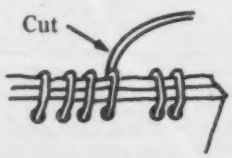


- Bring needle through next hole across from the first stitch. Cross over and thread it through the slit in the lacing.



- Keep stitches tight.

- As you are about to finish, leave a loose stitch in the next to last hole. Separate the leather layers. Lace final hole and bring lacing through the loop that is left by your last stitch. Tighten loops.

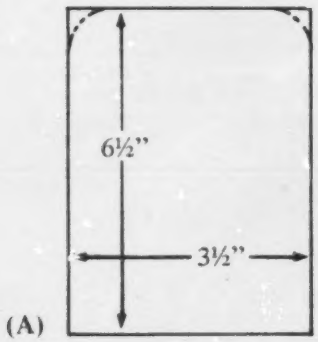



- Cut off and conceal.

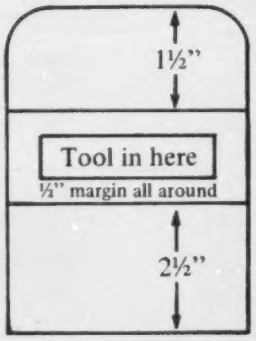
- With a mallet, flatten all lacing.

Coin Purse

Materials
- Tooling leather
- Modeling tool
- Cutting knife
- Spacing wheel
- Lacing
- Rubber cement
- Snap button
- Snap button set
- Lacing needle
- #0 or #1 drive punch



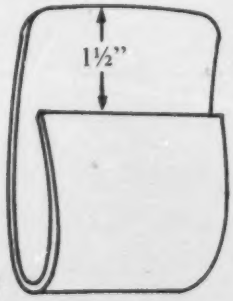
(A)



(B)

Procedure
- Cut one piece of leather measuring six and one-half inches long and three and one-half inches wide. Round off the corners on one end.* (Figure A)
- With a pencil, mark a line one and one-half inches from top edge and two and one-half inches from bottom edge. (Figure B)
- You may want to tool in an area in the center. Be sure to leave a one-half inch border on all four sides.
- Fold bottom piece, (measuring two and one-half inches) up to top line (one and one-half inches from top edge.) (Figure C) Glue edges with rubber cement.
- Run spacing wheel three-eighths inch from edge of coin purse. (Figure D)
- Punch holes for lacing around edge.
- Lace coin purse together.
- To set button snaps, follow manufacturer's instructions.

**Could use metric system here for measuring.*



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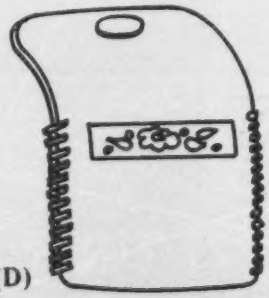
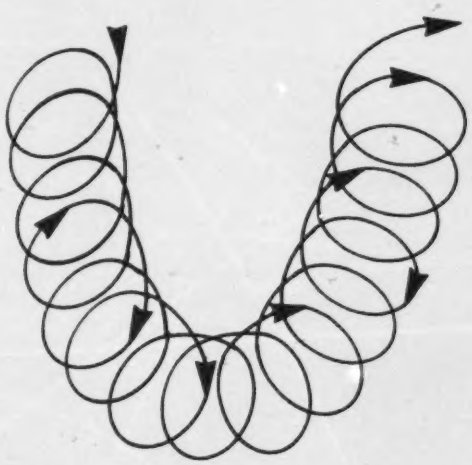

(D)

## Dyeing Leather

**Materials**
- Heavy paper or cardboard
- Cloth or paper toweling (for spills)
- Leather
- Dye
- Paint brushes or dye applicator (like one used for shoe polish)

**Procedure**
- Lay cardboard or paper over work area.
- Be sure that both your hands and the work surface are clean in order to keep the leather clean and free of smudges.
- Use a piece of scrap leather for a test sample.
- Dip applicator into dye.
- Beginning in the upper left hand corner of project, move applicator in an overlapping circular motion.
- When leather is dry, check to see if the dye has been applied evenly. (See diagram below) If a second coat is needed, apply in the opposite direction.



## Leather Tooling

**Objective**
To practice three methods of leather tooling.

**Materials**
- Modeling tool
- Sponge
- Water
- Hardwood surface

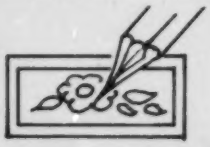
**Procedure**

Prepare three samples of leather tooling to demonstrate the following.

- Line design
- Flat modeling
- Repoussé modeling

*Line Design*

- Using a wet sponge, dampen the back (flesh side) of the leather until it becomes darker in color.
- Turn leather right side up on hardwood surface.
- Place paper pattern on top of leather.
- Using a hard lead pencil or tracing tool, trace over the design. Remove pattern.



- Trace again with modeling tool to make a deeper impression. To keep lines straight, ruler may be used. (Leather that is too dry may pucker. Moisten slightly. However, if leather is too wet, the impression will not stay.)

*Flat Modeling*

- Follow steps of line design.
- Then, with the broad end of the modeling tool, press down on the background area. This will raise the design up.

*Repoussé Modeling*

- Follow steps of line design.
- Then, with leather *face down*, in the palm of one hand, use the broad end of the modeling tool to press down on the part of the design you want to be raised.
- Turn leather over and press down on all of the area *around* the raised part.
- Let dry.

*Congratulations!* You have just completed three basic methods of leather tooling. Now describe in your own words in a paragraph form 1) the differences among the three methods of tooling and 2) the way each was done.

**(This is a homework assignment.)**

**Wristbands**

**Materials**
- Leather (7-8 oz.)
- #24 durable dot snaps or leather thongs
- #58 durable dot snap setter
- Rotary punch
- Stamping tools
- Dyeing and finishing supplies
- Mallet
- Knife

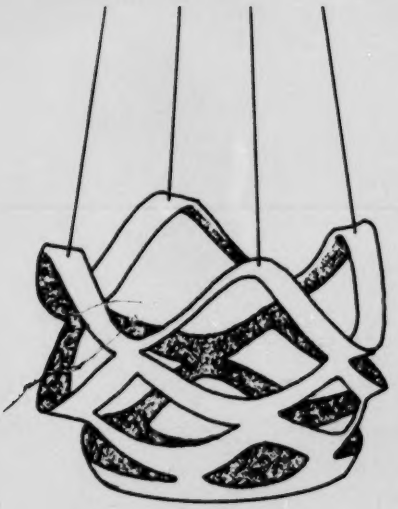
**Procedure**
- Cut wristband the desired width (approximately one and one-half inches wide) and the circumference of your wrist plus one inch.
- Moisten the leather and stamp the designs.
- Dye with Omega dye and cova dyes or antique finish.
- Finish by brushing on lacquer.
- Attach durable dot snaps. (or leather thongs)

**Medallions**

**Materials**
- Leather (7-8 oz.)
- Leather lacing or latigo thongs – one-quarter inch
- Rotary punch
- Stamping tools
- Dyeing and finishing supplies
- Mallet
- Knife

**Procedure**
- Cut medallion from pattern.
- Moisten leather and stamp the designs.
- Dye and finish.
- Punch holes for leather thongs.

**Hanging Candle Holder**



**Materials**

- Pencil, paper, compass, protractor
- Board for cutting leather
- Vegetable tanned leather
- Sharp knife or shears for cutting leather
- Leather mallet
- Round drive punches – #1 and #3
- Leather dyes and/or finishes
- Two leather thongs – four feet long
- Tin can for drying leather

**Procedure**

- Use the compass to draw a circle.
  Set the compass on the three inch mark. Draw the circle.
- Use a protractor to divide the circle into eight equal parts.
  Draw one line from the center to the edge of the circle. Mark the next line by locating a point 45 degrees from the first line. Make six more lines, each 45 degrees apart.
- Make another circle one-half inch from the inside of the first circle.
- Draw a third circle one-half inch inside the second circle.
- Draw a fourth circle one-half inch inside the third circle.
- Leave circle one complete.
- At sections one, three, five and seven on circles number two and four, erase one-quarter inch on either side of the line.
- At sections two, four, six and eight, on circle number three, erase one-quarter inch on either side of the line.
- Using your paper pattern, transfer the design to dampened leather with a modeling tool or a ball point pen.
- Punch holes at the end of each line with a number one drive punch.
- Using a number three drive punch, make four holes in the first circle (opposite the space in the third line).
- Using a sharp knife or shears, cut around the outer circle.
- Very carefully cut each line, be sure not to pass the one-half inch spaces.
- Apply dye or finish.
- Place the damp leather down over the tin can to dry.

- Tie and knot leather thongs to outer circle.
- Tie all ends together at top.
- Insert purchased or hand-crafted candle into leather candle holder.

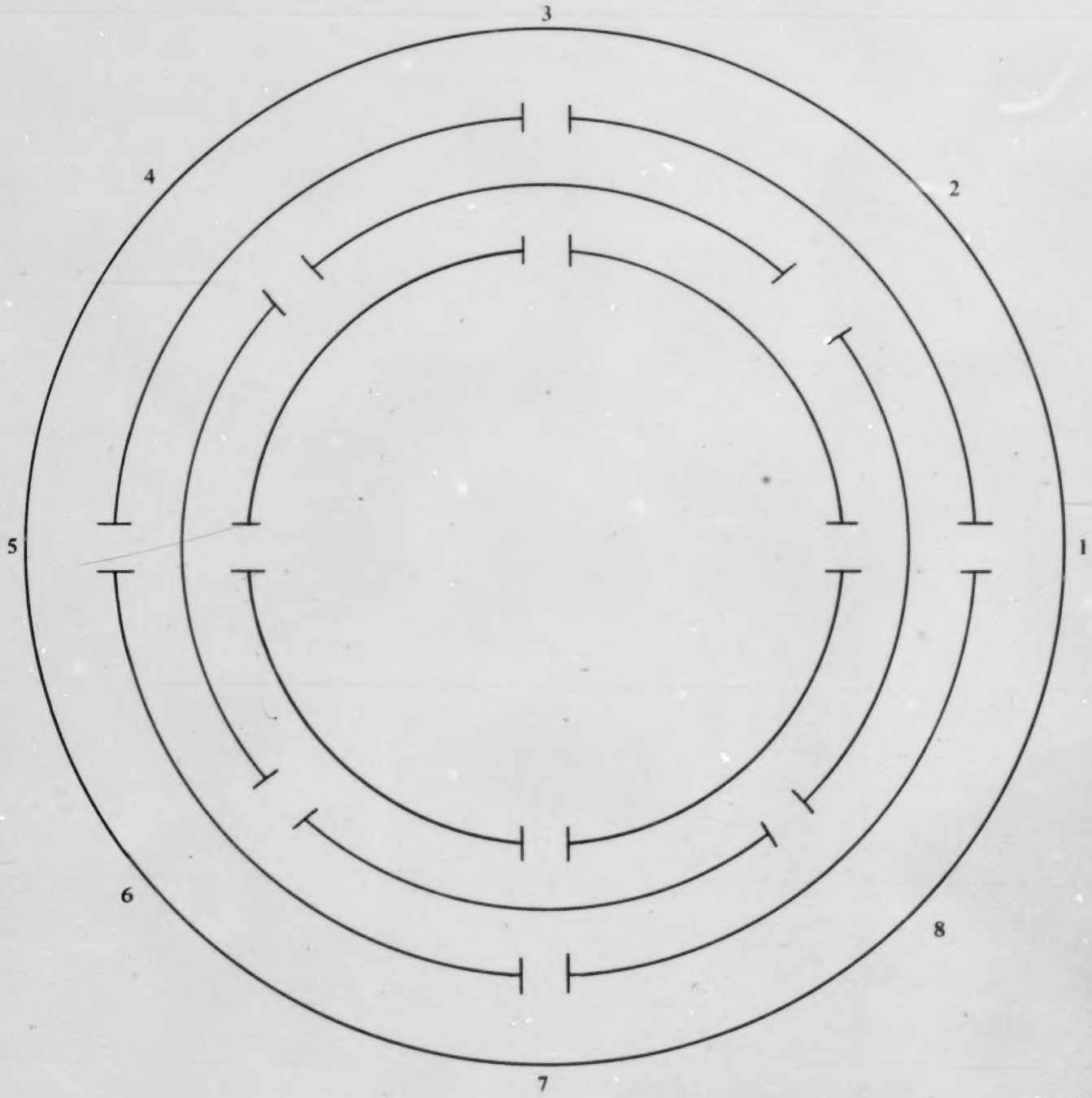



**DIAGRAM FOR HANGING CANDLE HOLDER**

## LEATHER VOCABULARY

**back** – a side with the belly cut off.
**belly** – the lower part of a side.
**casing leather** – a process of wetting the leather by rubbing a damp (not wet) sponge over the flesh side as evenly as possible. Then, the leather is turned over and the grain side (carving side) is dampened. When it begins to return to its natural color, carving can begin.
**chamois** – the flesh side of a heavy sheep, specially treated.
**drive punch** – a tool which is struck with a mallet to produce holes for lacing.
**full grain** – leather just as it is when taken off the animal. Only the hair has been removed.
**grain** – the outer layer of animal skins.
**hide** – the whole pelt from a large animal such as a horse or a cow.
**leather** – specially treated animal skins from which all flesh and hair have been removed.
**mallet** – used for striking leather tools and the leather itself.
**molding tool** – used for line tooling and tracing patterns, as well as modeling.
**rotary punch** – a six-tube punch with sizes used for lacing, setting snap buttons, eyelets, etc.
**side** – one half skin or hide.
**skin** – leather tanned in the whole pelt, same size and shape as it came from the animal.
**spacing wheel** – a tool which is rolled against the straight edge, leaving evenly spaced marks for punching holes.
**split** – the under sections of a piece of leather that has been split into two or more thicknesses.
**stamping tool** – a tool which is struck with a mallet to produce designs on leather.
**suede** – a finish produced by running the surface of leather on an emery wheel to separate the fibers in order to give the leather a nap.
**swivel knife** – used to cut the outlines of a design or pattern into leather.
**tanning** – the process of preparing the hide for use.
**transfer pattern** – a drawing of the outlines of a design . . . indicating the lines to be cut with the swivel knife.



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